

CHAPTER 7

Algebraic Expressions and Polynomials

Name : _____ ()

Class : _____ Date : _____

Marks : _____ /100

[Time allowed: 35 minutes]

1. Complete the following table and put a 0 in any inapplicable box. (14 marks)

Polynomial	Coefficient of					Constant term	Degree of polynomial
	x^5	x^4	x^3	x^2	x		
$4x^5 - 6x^2 - x - 1$							
$-3x^4 - 2x^2 + 7$							

2. Simplify the following.

(a) $(2a^5)(3a^4)$ (4 marks)

(b) $7b + 3 - 2b + 9$ (4 marks)

(c) $(5x + 6y^2) - (3x - 2y^2)$

(4 marks)

(d) $\frac{5y}{25y^3}$

(4 marks)

3. Simplify the following.

(a) $(2a^2b)(4ab^3)$

(4 marks)

(b) $(-2x^2y^3)^3$ (4 marks)

(c) $\frac{2(m^2n)(m^3n^2)^2}{(-2m)^4}$ (4 marks)

4. Expand the following.

(a) $3x(x + 2)$ (2 marks)

(b) $2(y - 2)(y + 3)$

(4 marks)

(c) $(x + 3)^2$

(4 marks)

5. Expand the following.

(a) $(x^2 - 2x)(3x^2 - 5)$

(4 marks)

(b) $(y^2 - 2y + 3)(2y - 1)$

(4 marks)

6. Simplify the following.

(a) $3x(x + 3) - (x - 2)(1 - x)$

(5 marks)

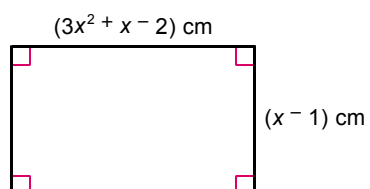
(b) $(-x + 2)(x - 1) + (2x + 3)(3x + 5)$

(5 marks)

7. (a) Howard spent $\$2x^2$ on buying x dozens of ball pens. Express the selling price of a ball pen in terms of x . (4 marks)

- (b) If $x = 24$, find the selling price of a ball pen. (4 marks)

8. In the following figure, the length and width of the rectangle are $(3x^2 + x - 2)$ cm and $(x - 1)$ cm respectively.

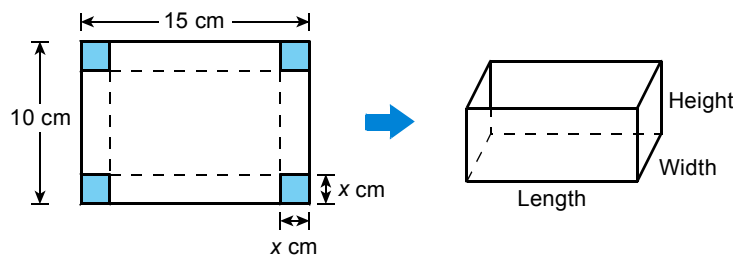


- (a) Find its perimeter. (5 marks)

(b) Find its area.

(5 marks)

9. The following figure shows a piece of rectangular paper with the length of 15 cm and the width of 10 cm. A small square with sides of x cm each is cut from each corner of the paper, and then the paper is folded up along the dotted lines to form a rectangular container.



(a) Express the length, width and height of the container in terms of x .

(6 marks)

(b) Express the capacity of the container in terms of x . (Arrange the answer in ascending powers of x .)

(6 marks)

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